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Selected Functions of an Educator in Medical Technology: The Teaching Supervisor

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SELECTED FUNCTIONS OF AN EDUCATOR IN MEDICAL TECHNOLOGY: THE TEACHING SUPERVISOR

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CHAPTER I

THE PROBLEM AND LIMITS OF STUDY

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to define some of the functions of the teaching supervisor in an American Medical Association Approved School of Medical Technology.

Importance of the study. Advances in clinical laboratory medicine during this century have indicated the need for well trained laboratory personnel. Since 1936 when the first list of approved schools of medical technology was published by the Council on Medical Education of the American Medical Association, the number of training positions and faculty necessary to instruct these students has increased at a tremendous rate. Instruction is no longer provided by the director of the laboratory alone. Demands on his time and requirements for uniform methods of education have created organized school systems within the hospital laboratory. The organization and operation of such programs in medical technology education have now become the joint responsibility of the pathologist and the teaching supervisor.

II. DEFINITIONS OF TERMS USED

American Society of Medical Technologists. The professional organization for medical technologists trained and certified under the auspices of the American Society of Clinical Pathology and other professionally qualified personnel is the American Society of Medical Technologists, referred to on occasion as A.S.M.T.

Approved school. Only those schools of medical technology accredited by the American Medical Association Council on Medical Education will be referred to as approved schools. The twelve month professional program follows three years of college education.

The Board of Registry of Medical Technologists. The Registry is a standing committee of the American Society of Clinical Pathologists, is composed of five members of the American Society of Clinical Pathologists and four members of the American Society of Medical Technologists. Through its efforts to elevate and standardize the training of medical technologists, the Registry has become to be recognized as the only authorative qualifying body for this field.

Medical Technologist. The medical technologist may be described as an auxiliary branch of pathology. Considered within the scope of this paper are only those persons receiving training in schools of medical technology approved by the American Medical

Association and who are registered as medical technologists with the American Society of Clinical Pathologists.

Medical Technology. The profession of medical technology may be defined as the application of scientific knowledge to the performance of laboratory tests which aid in the diagnosis and treatment of disease.

N.C.C.M.T. Wherever the letters N.C.C.M.T. occur, this is the accepted abbreviation for the National Committee for Careers in Medical Technology.

Pathologist. The pathologist is a physician who has taken special training in the sciences of treating disease, the nature of disease and the changes produced by disease. He is chiefly interested in diagnosing and following the course of disease by laboratory methods.

Teaching Supervisor. Within the scope of this paper, the term teaching supervisor will be used to specify the medical technologist having three years of experience in addition to a Bachelor's Degree, whose duties include the supervision of instruction within the American Medical Association Approved School of Medical Technology.

III. REVIEW OF THE LITERATURE

A review of the literature indicates that the role of the teaching supervisor in American Medical Association Approved Schools of Medical Technology has been poorly described. The faculty of which

this person is a member is composed of the director and an instructor for every two students. The "Essentials of An Acceptable School of Medical Technology" specify only that the teaching supervisor be a person on the staff "whose duties include supervising the teaching program and who possesses a Bachelor's Degree, is a registered medical technologist (A.S.C.P.) and who has had three years of experience or its equivalent."[1]

The duties which occupy the working day of this educator are legion. James, in 1958, said

> a teaching supervisor in a school of medical technology should function as a combination medical technologist, teacher, administrator, registrar, personal counselor, effeciency expert, public relations officer and professional representative.[2]

Roe, in 1963, further described the position as one of "faculty advisor, liaison officer, chief technologist and laboratory personnel officer."[3] Heinemann, Ross and Breen support the complex description

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[1] _____, "Essentials of An Acceptable School of Medical Technology," Journal of the American Medical Association, 182:467, October 27, 1962.

[2] Mary Frances James, "An Unmastered Role with a Challenge--The Teaching Supervisor," The American Journal of Medical Technology, 24:258, July-August, 1958.

[3] Ina L. Roe, "The Development of a Master's Degree Program for Teaching Supervisors in Medical Technology," The American Journal of Medical Technology, 29:3, January-February, 1963.

of duties entailed in the position.[4]

Regarding a position important enough to be specified in the requirements of the American Medical Association, James stated:

> The conceptions of the requirements for and responsibilities of such a staff member are surprisingly varied, frequently shockingly limited and even erroneous. This marked diversity is due, primarily, to the fact that ideas have been formed from observation of these positions as they are filled at the present time. Any composit picture of this role, even from broad experience in widely separated localities will still contain marked discrepancies.[5]

Factors attributing to variations in the position of teaching supervisor. The confusion surrounding the role of the teaching supervisor and the many variations in the position have been ascribed to many factors. According to James these may be classified into three broad groups:

> First are those due to the physical or organizational differences in the training centers. Second, are those resulting from varying degrees of understanding, interest and cooperation on the part of the school directors and hospital administrators. Third, are the reasons dependent on differences in ability, initiative and dedication of the teaching supervisors themselves.[6]

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[4]Ruth Heinemann, "What is Medical Technology?" Hospital Progress, 44:96-98, April, 1963; Doris L. Ross, "The Teaching Supervisor as a Leader," The American Journal of Medical Technology, 31:231-237, May-June, 1965; Mary E. Breen, "Role of A Teaching Supervisor In A School of Medical Technology," ASMT-ASCP Workshop Manual on Organization and Operation of Medical Technology Schools (Dartmouth: American Society of Clinical Pathology Commission on Education in Medical Technology, September, 1961, mimeographed.

[5]James, op. cit., p. 257.

[6]Ibid.

Writings by Ross support the first group, the many types of training centers. She described them as schools where the teaching supervisor serves also as chief technologist, schools where instruction to the students is by separate teachers representing the various laboratory desceptives and the school in which the teaching supervisor teaches every subject.[7] Much writing has been done relative to the second factor which stresses the need for cooperation among the school directors and hospital administrators.[8] The third element contributing to the confusion of the role relates directly to the teaching supervisor herself. Breen listed among the qualifications necessary are

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[7]Doris L. Ross, "The Teaching Supervisor as a Leader," The American Journal of Medical Technology, 31:232, May-June, 1965.

[8]E. J. Conners, "Medical and Paramedical Education in the Hospital," Hospitals, 38:128, April 1, 1964; O. O. Christianson, "Medical Technology Schools of the Future," Hospital Progress, 43:144, October, 1962; Phillip O. Nice, "Hospital and Approved School Relationship," ASMT-ASCP Workshop Manual on Organization and Operation of Medical Technology Schools (Dartmouth: American Society of Medical Technology--American Society of Clinical Pathology Commission on Education in Medical Technology, September, 1961, mimeographed;) Richard E. Palmer, "Shortage of Qualified Technologists Continues," Modern Hospital, 99:8, July, 1962; Doris L. Ross, "The Teaching Supervisor As a Leader," The American Journal of Medical Technology, 31:231-237, May-June, 1965; _____, "Test of Competence: Board of Registry of Medical Technologists," (editorial), Hospitals, 36:47, November 1, 1962; Merlin L. Trumbull, "Medical Technology Changes in a Changing World," Hospital Topics, 42:81-83, August, 1964.

professional competence and teaching ability.[9] That the teaching supervisor is a college graduate with three years of experience as a medical technologist should testify to professional competence.[10] The lack of particular training for the field of teaching has been the subject of endless articles. A study "embarking directly on a course of action to improve the quality of medical technology instruction in the Alabama schools . . . saw strengthening the teaching skills of the instructors as a major need."[11] Over the years, effort has been made to improve the caliber of training received by students in American Medical Association Approved Schools of Medical Technology. Roe stated that "the improvement of educational standards and elevation of the professional status have been stressed without also giving adequate heed to the special training needed by those who supervise the medical technology programs."[12]

A review of the literature availablein medical technology education since January, 1961 indicates that the problems today center

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[9]Breen, op. cit., "Role of A Teaching Supervisor."

[10]_____, The Guide Book For An Approved School of Medical Technology, (Muncie: The Registry of Medical Technologists of the American Society of Clinical Pathologists, 1962), p. 7.

[11]_____, The Alabama Pilot Study (Washington: National Committee for Careers in Medical Technology, 1963), p. 5.

[12]Roe, op. cit., p. 1.

about the areas cited by James in 1958.[13] Since her work in 1958, the college prerequisite for entrance into an American Medical Association Approved School of Medical Technology has been raised to ninety semester hours.[14] Teaching done in the program now must become comparable to that in the senior year of college, since the student receives a Bachelor of Science Degree upon the successful completion of the course.[15] The problem of defining the role of the teaching supervisor seems additionally related to two things: the recognition of the need for advanced academic training for both the faculty and the teaching supervisor,[16] and the need for the clarification of aims and objectives for schools of medical technology.

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[13]James, op. cit., p. 257.

[14]_____, Accredited Schools of Medical Technology (Muncie: The Registry of Medical Technologists, June 30, 1965), pp. 1-19; _____, The Registry of Medical Technologists of The American Society of Clinical Pathologists (Muncie: The Registry of Medical Technologists of the American Society of Clinical Pathologists, 1965), p. 3.

[15]Merlin L. Trumbull, "Curriculum Development in Schools of Medical Technology," The American Journal of Medical Technology, 28:268, September-October, 1962.

[16]W. G. Hutchinson, "Selection and Assignment of faculty in Schools of Medical Technology," The American Journal of Medical Technology, 27:5, January-February, 1961; Ruth Williams, "Quality Control in Medical Technology Education," The American Journal of Medical Technology, 29:347, November-December, 1963.

Limits of the study. Literature in the field of medical technology education since 1961 has been reviewed in an effort to describe selected functions of the teaching supervisor. Although some non professional literature was consulted, an effort was made to keep the study within the recent literature published by the professional organization of medical technologists: The American Society of Medical Technology, and by the accrediting associations of approved schools of medical technology: the Board of Schools of the American Society of Clinical Pathologists and the Council on Medical Education of the American Medical Association. The one piece of literature used that extended beyond these limits was the description of the teaching supervisor as made by James in 1958.[17]

Organization of the study. The role of the teaching supervisor in American Medical Association Approved Schools of Medical Technology is one which yet has to grow out of its adolesence into full maturity. The purpose of this paper was to consider a selection of the functions which are performed by this educator in the field of clinical laboratory medicine. Those responsibilities of the teaching supervisor which were considered may be divided into two areas. The first may be classified as duties relating to the organization and operation of the

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[17]James, op. cit., pp. 257-263.

school program: record keeping, orientation, student personnel services, and coordination of instruction. The second division of duties includes a selection of the administrative functions: recruitment, counseling, development of a faculty and coordination of the hospital and college medical education system.

CHAPTER II

SELECTED FUNCTIONS OF THE TEACHING SUPERVISOR

I. ORGANIZATION OF THE SCHOOL PROGRAM

Accreditation.

Primary among the functions of the teaching supervisor in a school of medical technology is that responsibility of directing the school according to the requirements set forth by the American Medical Association. Applications for approval of medical technology schools by the Council on Medical Education of the American Medical Association are made by the pathologist director of the program.[18]

> The Board of Schools of Medical Technology, acting in an advisory capacity to the Council, reviews the application and makes recommendations to the Council. The school is then visited by an inspector appointed by the Board of Schools of Medical Technology who makes a thorough investigation of the teaching staff, equipment, and facilities.[19]

Although application for such an inspection is made by the director of the school, the pathologist, the data necessary to complete the application form is maintained either by, or under the supervision of the teaching supervisor. "The Essentials of an

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[18]Breen, op. cit., "Role of A Teaching Supervisor;" "Essentials of An Acceptable School of Medical Technology," op. cit., p. 467; The Guide Book for An Approved School of Medical Technology, op. cit., p. 14.

[19]The Registry of Medical Technologists of the American Society of Clinical Pathologists, op. cit., p. 17.

Acceptable School" contain the following statement:

> Satisfactory record systems should be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared. Monthly and annual tabulation and classification of tests must be kept. An itemized report of these tests must be submitted with a schools application for approval and at the time of inspection of a school.[20]

Data necessary for the annual report of approved schools of medical technology is submitted upon approval by the pathologist director. Material necessary for the subsequent periodic inspections by the Board of Schools of Medical Technology[21] and the National Commission on Accrediting[22] is also collected and tabulated by the teaching supervisor. These continued evaluations serve both the school of Medical Technology and the hospital administration with a continuing measure of growth and success. Figure I shows the relationship of school accrediting bodies.

Physical facilities. The obtaining of physical facilities is an area which particularly requires the cooperation of the teaching supervisor with other departments. The necessity of cooperation

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[20] The Guide Book for An Approved School, op. cit., p. 5.

[21] The Registry of Medical Technologists of the American Society of Clinical Pathologists, op. cit., p. 17.

[22] _____, Accreditation of Allied Medical Services (American Medical Association Council on Medical Education, Washington: National Commission on Accrediting, 1964), pp. 1-4.

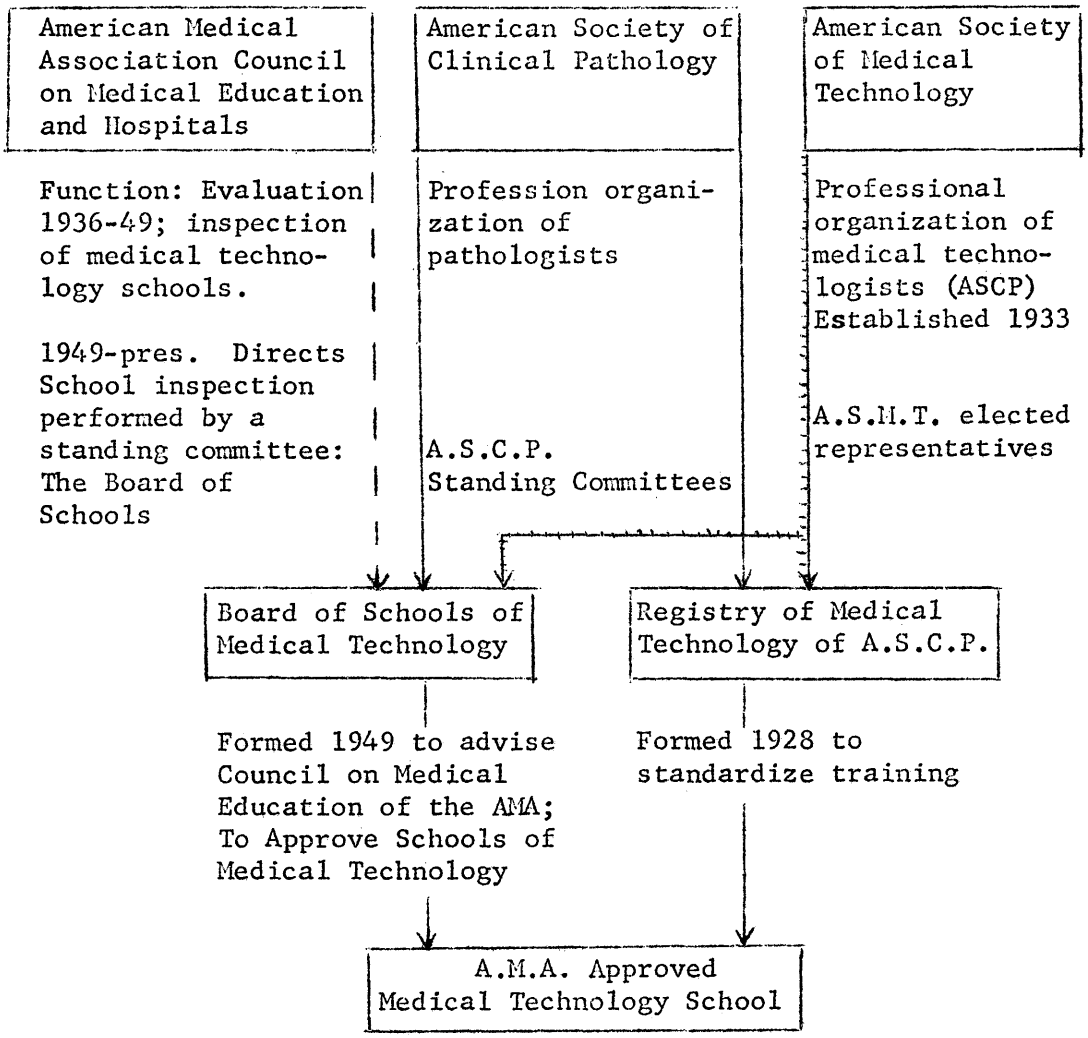

FIGURE I

DIAGRAM OF THE PROFESSIONAL

AND ACCREDITING GROUPS RELATED TO

AMERICAN MEDICAL ASSOCIATION

APPROVED SCHOOLS OF

MEDICAL TECHNOLOGY

efforts to obtain physical facilities is stressed in the literature.[23] Physical facilities should include an office for the supervisor,[24] a secretary to take care of routine clerical matters,[25] a classroom, student laboratory,[26] and a library.[27] The specific delineation of physical facilities is limited in the description of the school organization as made by the Board of Schools of Medical Technology, which states:

> Adequate space, light and modern equipment should be provided in the laboratory department. A library containing up-to-date reference texts and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained or be readily accessible to the institution.
>
> a) Space, light and modern equipment should be adequate for personnel and the number of tests performed with sufficient additional space and equipment for students.
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> b) A classroom is necessary and should be available when needed.

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[23] _____, The Alabama Pilot Study (Washington: National Committee for Careers in Medical Technology, 1963), p. 3; Conners, op. cit., pp. 125-128; Pacific L. Hug, "Medical Technology and the Human Factor," The American Journal of Medical Technology, 30:277-283, July-August, 1964; Ross, op. cit., p. 232; Trumbull, op. cit., p. 83.

[24] Alabama Pilot Study, loc. cit.

[25] Ibid.

[26] Ibid.

[27] Alabama Pilot Study, op. cit., p. 3, 11; Israel Davidsohn, A Curriculum for Schools of Medical Technology, (fifth edition; Muncie: The Board of Registry of Medical Technologists of The American Society of Clinical Pathologists, 1964), p. 19.

c) The library should include the latest edition of books and journals concerning laboratory tests, and these should be readily accessible to students working in the laboratory.[28]

A study done in the state of Alabama under the National Committee for Careers in Medical Technology with funds from the Health, Education and Welfare Department stated that an analysis of the major problems of schools showed "insufficient space allotted to hospital schools to allow for growth."[29]

Teaching aids. The importance of teaching aids is stressed in much of the literature.[30] Although these may only indirectly be classed as a facility, funds for teaching aids must be available. The Alabama Study indicated that "the library should include catalogued visual aids as well as books."[31] The study also points to the "need

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[28]The Guide Book for An Approved School of Medical Technology, op. cit., p. 4.

[29]Alabama Pilot Study, op. cit., p. 11.

[30]Sister M. Aloysia, "Student Orientation," ASMT-ASCP Workshop on Organization and Operation of Medical Technology Schools (Dartmouth: American Society of Medical Technology--American Society of Clinical Pathology Commission on Education in Medical Technology, September, 1961), mimeographed; "Essentials of An Acceptable School," op. cit., p. 467. The Guide Book for An Approved School of Medical Technology, op. cit., p. 5; James, op. cit., p. 259.

[31]Alabama Pilot Study, op. cit., p. 3.

for a central agency to develop and make available modern teaching aids nationally."[32]

Financial allotments. The teaching supervisor cooperates with administration in the preparation of budgets which insure financial resources for the continued operation of the school. Conners pointed out that not only does the hospital need a clear understanding of its responsibility in the total development of the student program, but it needs to express concern for the financial aspects of this educational effort.[33] Studies in the Alabama Project indicate that a budget for schools of medical technology would be helpful for several reasons among which is the hospital administration's recognition of the teaching function of this area of the hospital.[34]

Within the organization and evaluation of the medical laboratory school, the teaching supervisor has distinct responsibilities. These may range from the collection of data necessary for the inspection and accreditation forms filed by the pathologist, to the delineation of specific physical features necessary for the

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[32] Ibid., p. 11.

[33] Conners, op. cit., pp. 125-128.

[34] Alabama Pilot Study, op. cit., p. 3.

successful operation of the school, and finally is responsible for seeing that budget arrangements are made to cover the financial aspects of such an undertaking. The cooperative effort which this will require is evident. Work written emphasizing the recognition of the teaching supervisor as a cooperative administrative force[35] places great stress on the fact that

> the teaching supervisor does not replace the director in any way. The position is an adjunct to that of the directorship and should be appreciated for its value in relieving these very busy individuals of some of the burdens which otherwise would fall upon them.[36]

Registrar.

Second to the function of administrator and maintenance of accreditation, the teaching supervisor serves in the capacity of registrar for the School of Medical Technology.[37] The "Essentials of An Acceptable School of Medical Technology" require that:

> Satisfactory record systems should be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared . . . . This

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[35]L. A. Hill, "Medical and Para Medical Education in the Hospital: Annual Administrative Review," Hospitals, 36:103-106, April 16, 1962; Richard E. Palmer, "Shortage of Qualified Technologists Continues," Modern Hospital, 99:8, July, 1962; "Test of Competence," op. cit., p. 47; Trumbull, op. cit., p. 83.

[36]James, op. cit., p. 258.

[37]Heinemann, op. cit., pp. 96-98; James, op. cit., p. 258.

> detailed report is necessary in order to judge whether enough technical help is available to perform the work and also have time for teaching and supervising students. It is also necessary to know the number and variety of tests performed in order to determine whether the available clinical material is adequate for teaching students.

Further specifications in the "Essentials" require that:

> Transcripts of college credits and other credentials must be available. To insure appropriate subsequent registration, it is essential that evaluation of entrance credits be obtained from the Board of Registry of Medical Technologists. An acceptable school keeps records of each student's attendance and grades and it is also recommended that the type of tests performed be recorded.[38]

The section defines both admission records and permanent evaluative data which should be maintained in an approved school of medical technology. Admission inquiries are expediently answered by a well prepared bulletin which describes the course in detail.[39] The Guide Book for Approved Schools of Medical Technology indicates that each school should develop the forms suitable to its admission criteria.[40] A further suggestion made is that these be developed with the cooperation of a

> consultation committee composed of the director, teaching supervisor, and instructors in the school and when affiliated

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[38]"Essentials of An Acceptable School," op. cit., pp. 467-468.

[39]The Guide Book for An Approved School of Medical Technology, op. cit., p. 15; James, op. cit., p. 260.

[40]The Guide Book for An Approved School of Medical Technology, loc. cit.

with a college, in cooperation with a representative group from the college.[41]

A suggested group of forms to prepare in admitting students might include: application forms, admission process check sheet, reference recommendation, health records which include a physical examination, a dental check and immunization data. Helpful suggestions for the information which should be secured on these forms may be obtained from The Guide Book for An Approved School of Medical Technology.[42]

The admission process. The admission process must include an evaluation of the student's college transcript to be certain that the prerequisites of the Registry of Medical Technology of the American Society of Clinical Pathology have been fulfilled.[43] The procedure for transcript evaluation should be specified in the school bulletin, for in no instance[44] is the student to be accepted for training before the transcript approval.[45] In some

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[41] Ibid.

[42] The Guide Book for An Approved School of Medical Technology, op. cit., p. 16.

[43] The Guide Book for An Approved School of Medical Technology, op. cit., p. 8.

[44] The Guide Book for An Approved School of Medical Technology, op. cit., p. 10.

[45] "Essentials of An Acceptable School," op. cit., p. 4.

instances, counseling sessions may be required in order that the student understand if rejection is due to the lack of specific course work. Careful guidance of the students and strong college liaison officers can eliminate the lack of proper academic preparation.

Once the admission process has been completed, with each student's material placed orderly in a folder, a meeting of the admissions committee should be called by the teaching supervisor. Selection of students meeting predefined criteria can then be made.[46] It is suggested that the admissions committee be composed of teaching and supervisory personnel.

Permanent record data. The second set of data to be maintained by the teaching supervisor for each of the accepted students may be termed permanent evaluative material. Once again, forms for use in recording material in the permenent record serves to organize the process and as a reminder that the evaluation must be made. There seems to be no source of specific suggestion for the design of forms to be used. That records and evaluations should be available has been cited in The Guide Book for An Approved School of Medical Technology, by James, by Breen, and in the

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[46]The Guide Book for An Approved School of Medical Technology, op. cit., p. 16; James, op. cit., p. 260.

Curriculum for Schools of Medical Technology.[47] The type of forms that should be designed and made available by the teaching supervisor include the following: a monthly attendance record, a departmental grade record which should evaluate the practical and theoretical aspects of that area of training, a master grade form to serve as a permanent record, a check sheet for each department on which the student may keep track of the tests performed, an evaluation sheet to be completed by each departmental instructor and a grade form for the colleges with which the hospital is affiliated.[48] Rather than one final grade on the thirty semester hours, it may be found that breaking the years work into its components will be of value to students attempting to have the thirty hours evaluated for graduate study.

The Alabama Pilot Study found that among the major problems of schools of medical technology was the lack of "statistical studies of student records; including work performance as well as

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[47]Breen, op. cit., "The Role of the Teaching Supervisor;" Davidsohn, op. cit., p. 18; The Guide Book for An Approved School of Medical Technology, op. cit., pp. 1-20; James, op. cit., pp.260-261.

[48]The Guide Book for An Approved School of Medical Technology, op. cit., pp. 18-19; Betholene F. Love, "Development of the Curriculum in Medical Technology at West Virginia University," The American Journal of Medical Technology, 29:208, July-August, 1963.

registry examination results."[49] James pointed out that the teaching supervisor should not only keep student grades, as required by the Council on Medical Education of the American Medical Association, but should use this material in counseling, in planning instruction to meet individual needs and as an aid in selecting criterion for the admission of students.[50]

Orientation of new students.

Orientation for the students in the school of medical technology is a vital function performed by the teaching supervisor. There is no official requirement concerning this subject. However, The Guide Book for An Approved School of Medical Technology suggests "that a short orientation period be given before the student starts the regular rotation schedule."[51] Two suggested outlines for a student's orientation into the profession of medical technology are available. One was presented by Sister M. Aloysia at a workshop

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[48]The Guide Book for An Approved School of Medical Technology, op. cit., pp. 18-19; Betholene F. Love, "Development of the Curriculum in Medical Technology at West Virginia University," The American Journal of Medical Technology, 29:208, July-August, 1963.

[49]The Alabama Pilot Study, op. cit., p. 11.

[50]James, op. cit., p. 261.

[51]The Guide Book for An Approved School of Medical Technology, op. cit., p. 12.

on school organization,[52] a second method is presented in the Guidebook for Instruction in Medical Technology.[53] It is not intended that this section be a detailed study of the curriculum involved in orientation classes, it is pertinent to emphasize certain work that has pointed to the importance of the subject.

Whether orientation begins with the first college course,[54] at the junior year when many students declare their major[55] or whether it begins in the hospital compound, has been the point of much discussion. In those schools where a close liaison exists between the hospital and college, students can benefit from an orientation into the profession early in their training.[56] This has been thought to increase the percentage of students actually completing their training and entering the profession.

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[52]Sister M. Aloysia, op. cit., "Student Orientation."

[53]Sara H. Crowson and Frances D. Wideman (ed.), Pilot Edition of a Guidebook for Instruction in Medical Technology, (first edition; Memphis: National Council on Medical Technology Education, 1963), p. A2.

[54]Sister Elizabeth Ann, "The Development of A Medical Technology Curriculum," Hospital Progress, 44:52-56, September, 1963.

[55]Crowson, op. cit., p. A1; Love, op. cit., pp. 207-212.

[56]Crowson, loc. cit.

Formal orientation. For those students whose professional orientation begins in the American Medical Association Approved School of Medical Technology, we will briefly consider the formal introduction to the program.

That the student will understand the philosophy of the profession and the objectives of the school are primary in this lecture series.[57] It should be pointed out that this is a subject not clearly understood by teaching supervisors or instructors. Much has been written on this subject indicating ambivalence. Love stated ". . . goals of schools are poorly or not at all defined."[58] Whether medical technology is a profession[59] or a technical skill has yet to be firmly established through most recent writings ascribe the title of profession to this field of endeavor.[60]

Until the characteristics, objectives[61] and philosophy of this professional education have been firmly established in the

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[57]Elwood E. Baird, "Aims of Education in Medical Technology," Post Graduate Medicine, 33:40, January, 1963; O. O. Christianson, "Medical Technology Schools of the Future," Hospital Progress, 43:144, October, 1962; Sister M. Aloysia, op. cit., "Student Orientation."

[58]Love, op. cit., p. 211.

[59]Hug, op. cit., pp. 277-283.

[60]Ibid.

[61]Ibid.; Sister Elizabeth Ann, op. cit., p. 52.

minds of those who teach, there will continue to be confusion as the new student is oriented to this section of medical technology education. A profession has been described by Hug as "an attitude toward knowledge and learning, an attitude toward the service of one's fellow man, an attitude toward renumeration . . . freedom from purely materialistic preoccupations."[62]

Baird said that

> responsibilities of a professional nature cannot be implanted in a person who receives only training in test procedures without background experience of an education that includes the teaching of conceptual principles and philosophies.[63]

Brown presented what seems to be the prevalent authors' philosophy and objectives of education for American Medical Association Approved Schools of Medical Technology when he said,

> Education is the development of the students intellectual resources in such a manner as to best equip him for successful living, of which gainful employment is only one facet.[64]

Through the orientation process, the methods of education should be understood by the student as not those to solely produce

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[62]Hug, op. cit., p. 277.

[63]Baird, op. cit., p. 40.

[64]D. E. Brown, "Quality in Education and Practice in Medical Technology," Hospital Progress, 44:118, June, 1963.

technical competence, but to instill judgement.[65] The need for medical technologists to be liberally educated professional people has been stressed by Sister Elizabeth Ann and Baird.[66] Commenting on the dual obligation of the school to awaken these goals of education in the student and to provide service functions to the patient Hug said,

> The demand of service . . . does things to the secondary function of providing instruction and supervision of students . . . the pressing nature of service duties, more often than not, may prevent them (the instructors) from giving students the needed time and attention. As a result the educational program falls short and what is probably worse varies in completeness from student to student.[67]

Orientation to philosophy and the varied concepts of professional objectives may aid the student in understanding the opportunity to grow in theoretical knowledge and in willingness to serve mankind.[68]

Student policies. To lead the student to understand his responsibility to student policy is a second aim of the orientation class. Student policies will vary from school to school, it

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[65] Ibid.

[66] Baird, op. cit., p. 40; Sister Elizabeth Ann, op. cit., p. 52.

[67] Hug, op. cit., p. 282.

[68] Sister M. Aloysia, op. cit., "Student Orientation;" Conners, op. cit., pp. 125-128; Harold Wood, "Professionalism," The American Journal of Medical Technology, 31:339-343, September-October, 1965.

was suggested by Christianson, Sister Elizabeth Ann, and Williams that the policy include an evaluation of the program by each student.[69] The purpose of such an evaluation would be to provide the faculty with another view to be used as the curriculum is being developed. The students responsibility in the learning process[70] is further illustrated by the necessity for maintaining a notebook which is periodically checked by the instructor,[71] by the fact that a monthly attendance record is to be kept,[72] and that check sheets of work done in each department are to be turned in to the teaching supervisor.[73] The responsibility of the student

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[69]Christianson, op. cit., p. 144; Sister Elizabeth Ann, op. cit., p. 55; Williams, op. cit., p. 347.

[70]Sister M. Aloysia, op. cit., "Student Orientation;" Baird, op. cit., p. 40; Sister M. Danile, "Medical Technology Guidebook for Instruction," Hospital Progress, 44:168, October, 1963.

[71]The Guide Book for An Approved School of Medical Technology, op. cit., p. 6; Love, op. cit., p. 211.

[72]The Guide Book for An Approved School of Medical Technology, loc. cit.

[73]The Guide Book for An Approved School of Medical Technology, op. cit., p. 19; James, op. cit., p. 261; Christie E. McLeod, "Curriculum and Faculty Development," ASMT-ASCP Workshop Manual on Organization and Operation of Medical Technology Schools (Dartmouth: American Society of Medical Technology--American Society of Clinical Pathology Commission on Education in Medical Technology, September, 1961, mimeographed).

for his own gain and correlation of knowledge was emphasized by Sister Danile who stressed that the medical technology educator provides the key to the students learning experiences.[74]

Organizational chart. Showing the student the organizational chart of the laboratory and explaining its operation is a third basic orientation area. Knowing his role in the system of command may allow him to gain insight into the organization in which he plays an integral role.[75]

Professional conduct. Within the scope of the orientation curricula should be included a section on ethics and professional conduct.[76] Baird stresses that of equal or greater importance than quality education is the need to instill an attitude of professionalism in the student. The attitude is further defined as a frame of mind where the individual acts as the chief judge.[77] To be of greatest value to the student, these lectures should be well planned over the entire training period,[78] some perhaps

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[74]Sister M. Danile, op. cit., p. 168.

[75]Sister M. Aloysia, op. cit., "Student Orientation."

[76]Sister M. Aloysia, op. cit., "Student Orientation;" Christianson, op. cit., p. 144; Crowson, op. cit., pp. B1-B5; Davidsohn, op. cit., pp. 12-14; Hug, op. cit., p. 278.

[77]Baird, op. cit., p. 40.

[78]Sister M. Aloysia, op. cit., "Student Orientation."

repeated in order that the student may gain insight into the role of the medical technologist. The Guidebook for Instruction in Medical Technology, emphasizes that the student must be lead to "accept responsibility to patient and other members of the health team and adapt himself to his new role by applying ethical principles to personal and professional conduct."[79]

School curriculum. Orientation to the school curriculum should include the method of evaluation and the grading system, an explanation of the didactic lecture schedule and the rotation period through which the student will gain practical experience.[80]

A list of texts and required reading assignments should be presented to emphasize the vital need for independent study on the part of the student.[81]

Regarding the merits of orientation programs, the Guidebook for Instruction in Medical Technology contains the following statement:

> Surely we are responsible as instructors for starting our students through their medical technology course with favorable impressions and attitudes, a clear understanding of

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[79]Crowson, op. cit., p. B1.

[80]Sister M. Aloysia, op. cit., "Student Orientation;" Davidsohn, op. cit., p. 16; The Guide Book for An Approved School of Medical Technology, op. cit., pp. 17-18.

[81]Davidsohn, op. cit., pp. 15, 47.

> their position and needs, and knowledge of what is expected of them. Failure to do so may result in poor attitudes, waste of time and abilities, frustration, loss of students from the course and the production of medical technologists who do not have the proper professional attitudes. Planning and scheduling an orientation course requires first, an understanding of the needs of the students and, second an appraisal of the overall teaching program.[82]

Student Personnel Services.

The responsibility of the teaching supervisor to provide certain personnel services for the student in schools of medical technology is not elaborated upon in the literature. Sister M. Aloysia[83] and the Guidebook for Instruction in Medical Technology[84] consider areas under the subject of orientation which may be classified as student personnel services provided by the school.

Maintenance. Whether housing is provided by the hospital is a policy to be established by each institution. In cases where dormitory facilities are available, the teaching supervisor completes the necessary administrative procedures to insure accommodations for each student. James says that if housing is not provided, listings of available quarters should be accessable

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[82]Crowson, op. cit., p. A1.

[83]Sister M. Aloysia, op. cit., "Student Orientation."

[84]Crowson, op. cit., pp. A1-A14.

to students. Further noted is the need to arrange for meal tickets through the dietary office and to notify the laundry of students eligible for this service.[85]

Health. Requirements for student health policies are specified in The Guide Book for An Approved School of Medical Technology.

> Applicants shall be required to submit evidence of good health and successful vaccination, and a report of a medical examination should be part of the student's record. This examination shall include a roentgen examination of the chest. Provisions should be made for medical care and hospitalization when necessary, for a reasonable length of time.[86]

Health record forms will eliminate much confusion in providing data for the permanent record.[87] Health hazards in the laboratory may be eliminated by lecture sessions on laboratory safety during the orientation period.[88] The employees health

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[85]James, op. cit., p. 260.

[86]The Guide Book for An Approved School of Medical Technology, op. cit., p. 14.

[87]_____, Administration in the Department of Pathology (Danville, Illinois: Tutorial Workshop Under the Auspices of the College of American Pathologists, 1962), p. 151; James, op. cit., p. 260.

[88]Sister M. Aloysia, op. cit., "Student Orientation;" Crowson, op. cit., p. A-8.

service of the hospital should be available for the prompt attention of injuries received while on duty.[89] Health policies caring for the student during the entire year of training are established in accordance with hospital policy. Some find it advisable to charge a health fee, others take care of the costs in the school budget or by ascessing each student for a group insurance plan available to the entire educational system of the institution.

Scholarships. Financial arrangements and tuition aid were considered by James as among student personnel services.[90] Of the 781 accredited schools of medical technology as of June 30, 1965, 112 schools required students to pay tuition either to the hospital school, or the affiliated university. Of the total number of approved schools, 667 offered assistance in the form of a stipend or scholarship.[91] For those students to whom this aid is not available, the teaching supervisor should make arrangements for limited part-time employment.

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[89] The Guide Book for An Approved School of Medical Technology, op. cit., p. 14.

[90] James, op. cit., p. 260.

[91] _____, Accredited Schools of Medical Technology (Muncie: The Registry of Medical Technologists, June 30, 1965), pp. 1-19.

The teaching supervisor should be fully cognizant of scholarships available on a local, state and national level. Many such listings are published, but of particular value is the scholarship issue of G.I.S.T.[92] Not only are scholarships listed for the hospital training year, but undergraduate and graduate financial assistance is listed as well. Sister Charlotte[93] points out the importance of informing prospective medical technologists through the college advisor, of the availability of scholarships for both the college and hospital portions of the training program. Reprints of the G.I.S.T. scholarship issue will prove a valuable source of aid to education and to informing the public of the profession's interest in helping young people who are in financial distress.

Legal responsibilities. Through the personnel services of the school, the student should be informed of his legal responsibilities. The Guidebook for Instruction in Medical Technology[94] includes among the orientation lectures, a session

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[92] _____, "College Undergraduate Scholarships and Loans," G.I.S.T. No. 32 (Washington: National Committee for Careers in Medical Technology, Inc., 1966), pp. 4-8.

[93] Sister Charlotte, "Affiliation for Medical Technology Schools," Hospital Progress, 43:96-98, July, 1962.

[94] Crowson, op. cit., p. A12.

on the legal aspects of medical technology. From the bibliographical material contained therein, the teaching supervisor may find sources of lecture preparation on this subject.

Development of the Individual. Although the importance of the religious growth and social life of the student in an approved school has received little attention in the literature, The Guidebook for Instruction in Medical Technology[95] includes this emphasis in its orientation lectures. Williamson points out that these areas are a vital portion of the scope of student personnel services.[96] Certainly the role of religious growth and social life is directly related to the schools' philosophy of education and the aim of the medical technology school to educate the entire individual.[97]

Graduation. Although only brief mention is made in the literature of student personnel services which should be available

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[95] Ibid., p. A4.

[96] E. G. Williamson, Student Personnel Services in Colleges and Universities (New York: McGraw-Hill Book Company, 1961), pp. 29-32.

[97] Sister Elizabeth Ann, op. cit., p. 54; Anna Eagelson, "Medical Technology: Why A Higher Education?," Post Graduate Medicine, 35:48, June, 1964; Love, op. cit., p. 212.

to students in American Medical Association Approved Schools of Medical Technology, relatively no mention is made of an important service, that of graduation exercises, certificate or pin to be awarded by the hospital school. Two sources were located which recommended that the approved school grant a certificate upon the satisfactory completion of its program.[98] The Teaching Tech recommended that exercises be held and offered suggestions for the ceremony.[99] The selection of the speaker should be made jointly by the faculty and student body. These exercises should be held at a time when the incoming students may attend. The diploma, signed by the hospital administrator and the director of the approved school[100] and a school pin should be presented. Conducting a graduation exercise with faculty, students and family in attendance not only contributes to the recognition of the student body by hospital and townspeople, but with newspaper coverage, may aid in recruitment and publicity for the profession of medical technology.

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[98] Administration in the Department of Pathology, op. cit., pp. 151-152; The Guide Book for an Approved School of Medical Technology, op. cit., p. 19.

[99] _____, "Graduation Program--Dream or Reality?," Teaching Tech, Vol. V, No. 1 (Houston, October, 1963), pp. 1-2.

[100] The Guide Book for An Approved School of Medical Technology, op. cit., p. 19.

Curriculum Evaluation and Development.

A large portion of the teaching supervisor's function is involved in curriculum evaluation and development. Curriculum has been defined by McLeod as,

> The schematic and systematic arrangement of not only the materials of instruction but of all planned learning experiences of a clearly differentiated group of students for a certain period of time . . . under the direction and guidance of the faculty.
>
> The curriculum consists of the tools which the teachers use to effect behavior changes and thus include environment.[101]

In reviewing the literature to determine the goal of the curriculum there appears the consistent idea that no firm goal has been established. Brown said,

> The goal of a school of medical technology must be to provide an educational experience designed to bring all of the students intellectual attributes to bear on the problem of medical technology.[102]

Love pointed out that curricula and goals of schools are poorly or not at all defined.[103] Katz wrote that "a clear cut statement of aims must be promulgated by the three professional organizations concerned with the education of medical technologists." He further stated that after an examination of existing material he

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[101]McLeod, op. cit., "Curriculum and Faculty Development."

[102]Brown, op. cit., p. 118.

[103]Love, op. cit., p. 211.

was "unable to uncover a succinct statement of expected outcomes for medical technology education."[104] That there will always be conflicting interests has been pointed out by Sister Elizabeth Ann who contends that these conflicts can be "transformed by careful judgement from being sources of dissention and frustration into basis for prudent choice of values."[105]

Objectives. Clearly understood objectives are necessary to people and organizations. For achievement, one must know what he wants. Sister Elizabeth Ann described a basic list for consideration in setting up curriculum objectives:

> To develop an attitude of openness to new medical discoveries, to become progressively more critical, to understand this or that principle, to be able to perform this or that test in a valid manner and to write a clear report, to be reasonably tolerant of the ideas and mistakes of fellow workers and to respond easily to tasks which require cooperation with authority.[106]

McGlothin, as cited by Katz, described aims of education in "Patterns of Professional Education," as those patterns which produce:

> 1) Competence to practice his profession with sufficient knowledge and skill to satisfy its requirements. 2) Social

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[104]Stanley Katz, "Selection and Evaluation of Students in Medical Technology Degree Programs," The American Journal of Medical Technology, 3:51-63, January-February, 1964.

[105]Sister Elizabeth Ann, "Conflicting Interests in Curriculum Development," Hospital Progress, 44:110, November, 1963.

[106]Ibid.

> understanding with sufficient breath to place his practice in the content of the society that supports it and to develop capacity for leadership in public affairs. 3) Personality characteristics that make possible effective practice and effective living. 4) Zest for continued study which will steadily increase knowledge and skill required by practice. 5) Competence in conducting or interpreting research so he can add to human knowledge either through discovery or application of new truth.

Katz further emphasized the need for the medical technology curriculum to move to a program with emphasis on knowledge, concepts and principles.[107] The need for medical technology education to equip the student with professional ideals and instincts, not merely technical competence has been stressed in writings by Rausch in 1962,[108] by Baird,[109] Heinemann,[110] Brown,[111] Hovde,[112]

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[107]Katz, op. cit., pp. 55-56.

[108]Verna Bausch, "Future Advances in Medical Technology," Hospital Progress, 43:92, March, 1962.

[109]Baird, op. cit., p. 40.

[110]Heinemann, op. cit., pp. 96-98.

[111]Brown, op. cit., p. 118.

[112]Ruth Hovde, "The Dynamics of Education in Medical Technology," The American Journal of Medical Technology, 29:72, March-April, 1963.

and Sister Elizabeth Ann[113] in 1963, by Sister Elizabeth Ann,[114,115] Peeler,[116] Conners,[117] Hug,[118] Shindell[119] and Fagelson[120] in 1964, Wood[121] in 1965 and by Haley[122] in 1966. Opposition to the need for an education of the whole individual was voiced by Crowley[123] in 1962.

From the emphasis found in the literature, the objectives of medical technology education must move towards a curriculum which provides education for the whole person,[124] which teaches

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[113]Sister Elizabeth Ann, op. cit., September, 1963, p. 54.

[114]Sister Elizabeth Ann, "Social Responsibility for the Curriculum," Hospital Progress, 45:112-8, January, 1964.

[115]Sister Elizabeth Ann, "Professional Demands of the Curriculum," Hospital Progress, 45:92, February, 1964.

[116]Annie Laurie Peeler, "Medical Technology as A Profession," Hospital Topics, 42:75, June, 1964.

[117]Conners, op. cit., p. 125.

[118]Hug, op. cit., p. 283.

[119]S. Shindell, "Programmed Instruction and Its Usefullness for the Health Professions," The American Journal of Public Health, 54:982-990, June, 1964.

[120]Fagelson, op. cit., p. 48.

[121]Wood, op. cit., pp. 339-343.

[122]Leanora Haley, "Status or Status Quo?" The American Journal of Medical Technology, 32:28-32, January-February, 1966.

[123]L. V. Crowley, "Patient Centered Medical Technology," Hospital Progress, 43:98, May, 1962.

[124]Fagelson, op. cit., p. 48.

the student to think,[125] and which moves from methodology to a deeper knowledge of scientific principle.[126] The struggle for agreement on curriculum content, on philosophy and goals prevalent in schools of medical technology has been described by Conners as one of the forces which shape the educational contribution of hospitals.[127]

Curriculum content. An effort to solve the delema of curriculum content for approved schools of medical technology was evident in the preparation of the Guidebook for Instruction in Medical Technology[128] and in the work of the Alabama Pilot Study.[129]

> The Guidebook was designed to help the inexperienced teaching technologist, and to serve as a guide for course content to assure that the students in Alabama schools would receive comparable educational experiences. Course and lecture outlines, reading assignments, study questions and available audio-visual materials were given for courses on orientation, ethics and professional conduct, Urinalysis Hematology, Immunology, and Serology, Blood Bank, Microbiology, Parasitology, Histology, Introduction to cytology, Clinical Chemistry and Paper Electrophoroses . . . Because of the requests from all parts of the country for copies of the final draft, this has been prepared as a Pilot Edition. One copy is being sent to each of the A.M.A.-Approved Schools.[130]

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[125]Heinemann, op. cit., pp. 96-98.

[126]Hug, op. cit., p. 283.

[127]Conners, op. cit., p. 128.

[128]Crowson, op. cit., pp. 1-366.

[129]The Alabama Pilot Study, op. cit., pp. 1-23.

[130]Ibid., p. 6.

Since 1937 when the first edition was made available, the Board of Registry of the American Society of Clinical Pathologists has recommended Davidsohn's A Curriculum For Schools of Medical Technology.[131] This text is described as "an out growth of the author's experiences in the training of medical technologists."[132] It was stated that the book is "meant to be an outline of a curriculum for training."[133] Although the text has been a valuable aid to the teaching supervisor, its plan and scope do not compare with the Guidebook.[134] Because the Alabama Pilot Study found in its analysis that one of the major problems of schools was the "need for a central agency to develop and make available modern teaching aides nationally,"[135] effort was made to design a guidebook to help the inexperienced teacher. Cunningham, in the foreword to the Guidebook for Instruction in Medical Technology, says that "it is no substitute for earnest preparation by the teacher and it is not to stifle initiative or experimentation."[136] The Guidebook then came in an effort to supply

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[131]Davidsohn, op. cit., pp. 1-22.

[132]Ibid., p. 5.

[133]Ibid.

[134]Crowson, op. cit., pp. 1-366.

[135]The Alabama Pilot Study, op. cit., p. 11.

[136]Crowson, op. cit., foreword.

the teacher in American Medical Association Approved Schools of Medical Technology with a "systematic arrangement of instruction."[137]

Curriculum Development. From a review of the literature, certain areas of curriculum development have been stressed as those to which the teaching supervisor has particular responsibility. In further consideration of the developing role of this medical educator, a brief review of the areas relative to didactic and rotation schedules is justified. Both the rotation schedule of students during hospital training and the didactic lecture series may follow varied procedures in practical application. These may vary dependent on factors that each teaching supervisor experiences in her particular situation. The Guide Book for An Approved School suggested that a definite rotation plan should be established and each student, instructor, and supervisor should receive a copy.[138] Trumbull said regarding admission dates,

> The Board of schools makes no recommendation . . . . It is my opinion that there is probably an inverse correlation between the frequency of admission dates per year and the quality of the school.[139]

James added that the plan of instruction should be revised to include

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[137]McLeod, op. cit., "Curriculum and Faculty Development."

[138]The Guide Book for An Approved School of Medical Technology, op. cit., p. 17.

[139]Trumbull, op. cit., p. 267.

new material and to meet the special needs of a majority of the students.[140] The Guide Book for An Approved School stated:

> The time alloted and material to be covered in the didactic schedule may depend upon the requirements of the affilliated college . . . . It should include the basic principles performed in the laboratory in each discipline and be adequate to cover use of reading assignments, student projects, seminars and audio-visual aids.[141]

Specified in the Guide Book are minimum requirements for didactic and rotation schedules. The curriculum of

> instruction should follow a planned outline and include test assignments, lectures, discussions, demonstrations, supervised practice, practical examinations and quizzes, both oral and written.[142]

A copy of this completed outline is submitted both for original approval of the program and for its periodic inspection.[143] Breen and James confirmed the fact that these preparations should be made by the teaching supervisor.[144] The Guide Book for An Approved School contains a suggested combined schedule using multiples of four weeks.[145]

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[140] James, op. cit., p. 259.

[141] The Guide Book for An Approved School of Medical Technology, op. cit., p. 17.

[142] Ibid., p. 12.

[143] Ibid.

[144] Breen, op. cit., "Role of A Teaching Supervisor;" James, op. cit., p. 261.

[145] The Guide Book for An Approved School of Medical Technology, op. cit., p. 18.

Few schools will find the one hundred hour lecture minimum sufficient with the present emphasis on an education providing theory and principle.[146] Hutchinson pointed this out and suggested that the hospital lecture and rotation period be replaced with the time being spent in an even less technical period completely on the college campus.

Teaching aids. In addition to schedule preparations, the teaching supervisor should be resourceful in obtaining and collecting teaching aids for the use of those instructing in the school program.[147] The need for such material in the curriculum was pointed out in the "Essentials of An Acceptable School of Medical Technology."[148] The Alabama Pilot Study saw as a major problem of schools, the "need for a central agency to develop and make available modern teaching aids nationally."[149] Conclusions drawn from the study indicate that

> schools have neither the time nor the ability to develop and evaluate such materials for themselves, and while they benefit more and more from the Audio-Visual Library of the ASMT Education and research fund and the ASCP Commission on continuing

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[146]Baird, op. cit., p. 40.

[147]James, op. cit., p. 259.

[148]"Essentials of An Acceptable School," op. cit., p. 467.

[149]The Alabama Pilot Study, op. cit., p. 11.

> Education Projects, they will still have tremendous needs in this field that can probably be met fully only by the continuing assistance of a central body.[150]

Until such a recommendation has been made a reality, the teaching supervisor will continue to use sources as the ones just mentioned, educational publications of the Catholic Hospital Association, A Curriculum for Schools of Medical Technology and the Communicable Disease Center of the Public Health Service. Addresses of teaching aid sources may be found in the appendix. A gradual coordination of the available sources in the immediate area of the school will facilitate the use of audio-visual aids in teaching. The Guidebook for Instruction in Medical Technology[151] will be an especially valuable asset to the teacher until a bibliography of teaching aids can be developed at a local or national level.

The selection of texts and preparation of reading assignments is a time consuming, but important job related to the curriculum responsibilities of the teaching supervisor. Reading assignments are necessary for the understanding of the subject[152] and so important that the preparation of the Guidebook for Instruction in Medical Technology included detailed reading lists for each section of the

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[150] Ibid., p. 12.

[151] Crowson, op. cit., pp. 1-366.

[152] Davidsohn, op. cit., p. 16.

curriculum.[153] Neither these reading lists nor the ones listed in A Curriculum for Schools of Medical Technology[154] should substitute for the careful preparation and coordination of reading lists by each instructor. In connection with the stress on the importance of outside reading assignments, Davidsohn said:

> It is recommended by the Board of Schools of Medical Technology that assignments and reports by students be given in class, so as to familiarize the student with standard sources of material.[155]

Additionally, Davidsohn, and Sister M. Antonia stressed the importance of the student becoming familiar with the valuable knowledge available in journal articles.[156] The reading of professional journals is described as a method through which the student can gain knowledge; journal clubs in each laboratory will provide continuing education media for students and faculty.[157]

Trumbull and Christianson supported the point of view that an administrative manual is a necessity for efficient laboratory

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[153]Crowson, op. cit., pp. 1-366.

[154]Davidsohn, op. cit., pp. 1-122.

[155]Ibid., p. 16.

[156]Ibid.; Sister M. Antonia, "Continuing Education for Medical Technologists," Hospital Progress, 43:96, November, 1962; Sister M. Antonia, "Professional Challenge," Hospital Progress, 43:98, December, 1962.

[157]Davidsohn, loc. cit.

operation.[158] Christianson said the manual is an asset to the student learning the operational procedures of the laboratory and that it would serve as an asset to the lecture series on economics and business operations of the laboratory.[159] James, wrote of the importance of a manual, but described it as a manual of procedures to which the student may add or refer.[160] In the literature, the terms, manual and notebook are used interchangeably and may mean student check lists and proficiency ratings,[161] a laboratory procedure manual,[162] or even a detailed operational manual of the school.[163] In his description of the school manual, Trumbull said it should contain:

> such information as the objectives of the school, admission procedures, orientation outlines; policies governing students, faculty and administration, lecture and laboratory schedules and student check lists. The compilation and maintance of written data of this nature provide for consistancy and more systematic review.[164]

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[158]Trumbull, op. cit., p. 270; Christianson, op. cit., p. 144.

[159]Christianson, loc. cit.

[160]James, op. cit., p. 259.

[161]Sister M. Aloysia, op. cit., "Student Orientation;" The Guide Book for An Approved School of Medical Technology, op. cit., p. 6.

[162]James, op. cit., p. 259.

[163]Trumbull, op. cit., p. 270.

[164]Ibid.

Trumbull does not indicate to whom this responsibility would fall. Since much of the material to be included in it is within the scope of the teaching supervisor's function, it is probable that she would originate and maintain such a manual with the cooperation of the hospital administration and pathologist director of the school.

Since the curriculum includes all tools to be used effecting behavior changes, assisting the student in the preparation of a research paper may be considered among the functions of the teaching supervisor. Breen, Sister M. Aloysia and Davidsohn supported the importance of individual study and research on the part of the student.[165]

Davidsohn stated that those directly in charge of the student program must give a part of their time in the guidance of a student undertaking such a project.[166] The Guidebook for Instruction in Medical Technology considered the matter of sufficient importance to devote a lecture section to the preparation of a research project in order that both student and supervisor have a better conception of approach to the subject.[167]

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[165]Breen, op. cit., "Role of A Teaching Supervisor;" Sister M. Aloysia, op. cit., "Student Orientation;" Davidsohn, op. cit., p. 19.

[166]Ibid.

[167]Crowson, op. cit., p. A5.

The responsibilities of the teaching supervisor to curriculum development are primarily aimed at defining the objectives held by the particular school with which she is associated. Once this has been established, the development of a curriculum is facilitated. Curriculum content and the form of its presentation have been organized by the Alabama Guidebook[168] thus providing a more detailed and uniform method of didactic instruction for the supervisor. Texts as this aid the developing of a faculty for the disciplines of medical technology. The organization of schedules, preparation of reading lists and collection of teaching aids for the instructor's use are within the scope of curriculum. The development of the student's proficiency in the profession of medical technology is accomplished through journal clubs and research papers which are under the direction of the teaching supervisor. These examples are illustrative of the tremendous responsibility that can be experienced by the teaching supervisor in the continuing process of curriculum evaluation and development in an American Medical Association approved School of Medical Technology.

The role of the teaching supervisor in the organization and operation of the school program is a varied one.[169] A review of the literature has indicated that the role changes with the school in

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[168] Ibid., pp. 1-366.

[169] Heinemann, op. cit., pp. 96-98.

which the teaching supervisor is employed.[170] Basically, however, her functions in the school may be divided into the following positions: (1) administrator, as physical and educational standards which lead to continued approval of the School of Medical Technology by the Council on Medical Education of the American Medical Association are maintained; (2) registrar, as the process of record keeping and admissions is handled in an orderly efficient fashion; (3) teacher in the orientation classes for new students; (4) director of student personnel services; (5) and coordinator of instruction, a task made additionally difficult by the lack of firmly established aims and objectives[171] for the educational program in medical technology.

II. ADMINISTRATIVE FUNCTIONS

Although secondary to the duties involved in the organization and operation of the school of medical technology, the administrative functions of the teaching supervisor are none the less essential to the success of the program. Counseling and liaison work within the hospital and on the college campus, recruitment of new people into the profession, and the responsibilities entailed in developing a faculty are selected areas in which the teaching supervisor may

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[170]James, op. cit., p. 257.

[171]Trumbull, op. cit., p. 262.

operate in an administrative capacity.

Counseling.

That counseling services are a function within the role of the teaching supervisor is supported by The Guide Book for Approved Schools of Medical Technology.[172] Breen in describing the position included counseling as a responsibility of the teaching supervisor.[173] To what extent this is to be performed cannot be determined from the available literature in medical technology education. Certainly, the importance which counseling has been shown to have in other professions should make it applicable to medical technology, a profession in which the student may be confronted with strange and unexpected hospital situations.[174] Krumboltz defined counseling as consisting of "whatever ethical activities a counselor undertakes in an effort to help the client engage in those types of behavior which will lead to a resolution of the client's problems."[175] He further pointed out that the advantage of the definition is that the method is not specified, but what he is trying to accomplish is.

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[172]The Guide Book for An Approved School of Medical Technology, op. cit., p. A1.

[173]Breen, op. cit., "Role of A Teaching Supervisor."

[174]Crowson, op. cit., p. A1.

[175]John D. Krumboltz, "Behavioral Counseling: Rationale and Research," The Personnel and Guidance Journal, 44:384, December, 1965.

Methods of counseling which may be applicable to the hospital school situation will not be described. The teaching supervisor is referred to the many excellent texts and research articles available in the professional literature.

Academic and personal counseling. In an article describing medical technology schools of the future, Christianson wrote that the duties of the teaching supervisor should include academic and personnel counseling.[176] Suggested in The Guide Book for An Approved School of Medical Technology is that students should be evaluated on factors which are not involved in the performance of practical work.[177] "These comments should not influence the grade of the student, but are useful in counseling the student."[178]

Educational counseling. Since training in the field of clinical laboratory medicine may be considered to include post graduate specialties, such as the Certificate in Blood Banking[179] and Certification in Nuclear Medical Technology,[180] the teaching supervisor may be of counseling assistance to the student who shows exceptional

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[176]Christianson, op. cit., p. 144.

[177]The Guide Book for An Approved School of Medical Technology, op. cit., p. 18.

[178]Ibid.

[179]"Essentials of An Acceptable School," op. cit., p. 9.

[180]Ibid., p. 11.

A. M. A. Approved Schools, showed that of the 352 colleges replying only sixty-one had a medical technologist who served as advisor.[184] The need for medical technologists, and in this instance, the teaching supervisor, to serve as liaison officer and counselor in an effort to alleviate the medical technology drop-out problem was stressed, among others, by Godwin and Sister Mary Martin.[185]

Counseling services are a function within the scope of the teaching supervisor's position. Whether it be one of advisor on the college campus, educational counselor to hospital school graduates, or the handling of personal problems, the role of counselor is another facet of the many sided position held by the teaching supervisor in schools of medical technology.

Recruitment.

Among the administrative functions of the teaching supervisor may be included the role of recruitment officer. The Guide Book for An Approved School of Medical Technology suggests that active recruitment programs should be carried out.[186] This necessity for

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[185]Godwin, op. cit., p. 20; Sister Martin, Mary, "Why Medical Technology Students Drop Out," Hospital Progress, 46:120, September, 1965.

[186]The Guide Book for An Approved School of Medical Technology, op. cit., p. 15.

the success of the profession has been supported in writings by Breen, Katz and Palmer.[187] Haley described the urgent need for recruitment and active public relations in the profession of medical technology. The public, she said, has no conception of the technologists educational background or of the dedication he must have to work.[188] The Alabama Pilot Study in medical technology education described recruitment efforts as essential to the success of American Medical Association approved schools.[189] Christianson said that in 1962, schools of medical technology were only filled to 71 per cent of their total capacity.[190] A Georgia survey in 1963 further supported the existence of large numbers of vacancies in training programs.[191] Palmer, in 1962, commended work done by the National Committee for Careers in Medical Technology. During a seven year period their efforts had increased enrollment 84 per cent.[192] Even this he further stated, supported by Trumbull,[193]

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[187]Breen, op. cit., "Role of the Teaching Supervisor;" Katz, op. cit., p. 63; Palmer, op. cit., p. 8.

[188]Haley, op. cit., p. 31.

[189]The Alabama Pilot Study, op. cit., p. 8.

[190]Christianson, op. cit., p. 144.

[191]"Georgia Shows 44% Decline at College Level," loc. cit.

[192]Palmer, loc. cit.

[193]Trumbull, op. cit., p. 81.

would hardly keep pace with the professions needs. Openings in the eight hundred[194] American Medical Association Approved Schools can be filled through joint efforts of college, hospital, and high school personnel.[195] The role that the teaching supervisor can perform is a demanding one, but the evident need for recruitment is an activity to which she should feel a professional responsibility.

The recruitment of young people into the field to meet the present demands for technically trained personnel[196] must be done with an emphasis on only those schools accredited by the Council on Medical Education of the American Medical Association. Up to date lists of the eight hundred schools with such accreditation may be obtained from The Registry of Medical Technology. It is important that all guidance workers, on the high school level especially, be informed. A letter to counselors and student personnel administrators on March, 1965, from the American Personnel and Guidance Association made the following statement:

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[194]United States Department of Labor, Occupational Outlook Handbook: 1966-67, Bulletin No. 1450, (Washington: Government Printing Office, 1966), p. 102.

[195]Katz, op. cit., p. 63.

[196]J. A. Cunningham, "Meeting the Demand for Technically Trained Personnel in the Medical Laboratory," Bulletin of the College of American Pathologists, 18:82-85, May, 1964.

> Last April, the National Commission On Accrediting gave official recognition to accreditation by the Council on Medical Education of the A. M. A. in collaboration with the related professional organization of educational programs in Medical Record Librarianship, Medical Technology, Occupational Therapy, Physical Therapy. These collaborative plans of accreditation are the only ones for these fields that have been given this recognition. The National Commission on Accrediting is an independent educational agency supported by the colleges and universities of the United States to improve the operation and effectiveness of accreditation in higher education.[197]

Copies of material relating to this accrediting of American Medical Association Approved Schools of Medical Technology is available from the National Commission on Accrediting. The importance of informing counselors of accreditation and American Medical Association approved training programs is emphasized by an editorial in Hospitals, by Peeler, and by the bulletin of The Registry of Medical Technologists of the American Society of Clinical Pathologists.[198]

Methods of recruitment. Recruitment procedures may include visits to local colleges, high schools,[199] open house with field

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[197]Arthur Hitchcock, Post Secondary Accrediting, A Letter to Counselors and Student Personnel Administrators. (The American Personnel and Guidance Association, March 1, 1965), p. 1.

[198]"Test of Competence," op. cit., p. 47; Annie Laurie Peeler, "American Society of Medical Technologists Takes Stand on Education," Modern Hospital, 101:10, October, 1963; The Registry of Medical Technologists of the American Society of Clinical Pathologists, op. cit., pp. 1-2.

[199]James, op. cit., p. 262; Betholene F. Love and Thelma Karnoupakis, "Recruitment at the Grass Roots Level," The American Journal of Medical Technology, 32:33-37, January-February, 1966.

trips and tours through the laboratory and other facilities of the hospital,[200] exhibits at local science fairs,[201] talks to youth organizations,[202] and lectures to professional audiences, especially school librarians, guidance counselors and science teachers.[203] Love described a plan of recruitment in which a lecture and slides were used not to recruit the high school students into any one school, but to interest them in the profession.[204] Illustrative of a state wide comprehensive health careers recruitment project was the program released by the Virginia Council on Health and Medical Care.[205]

Examples of recruitment methods include personal contact of all local guidance counselors, providing literature for distribution and lists of medical technologists who will work with science teachers and students on projects.[206] James said that requiring

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[200] James, loc. cit.

[201] _____, "M. T. (ASCP) Salaries Increase 16% Since 1959," G.I.S.T., No. 22 (Washington: National Committee for Careers in Medical Technology, Inc., 1963), pp. 1-3; The Guide Book for An Approved School of Medical Technology, op. cit., p. 15.

[202] Ibid; James, loc. cit.

[203] "M. T. (ASCP) Salaries Increase 16% Since 1959," loc. cit.

[204] Love and Karnoupakis, loc. cit.

[205] _____, "Health Manpower for Virginia," (Richmond, Virginia: Council on Health and Medical Care, 1966). (Mimeographed.)

[206] "M. T. (ASCP) Salaries Increase 16% Since 1959," loc. cit.

students to wear "Approved School" uniform patches, obtainable from the Registry of Medical Technologists, would both publicize the profession and recruit new students into the local school.[207]

Recruitment activities of the teaching supervisor may be facilitated by the use of movies, slides, lectures, exhibits, and literature. Films for use in recruiting programs are available from state recruitment chairmen and the National Committee for Careers in Medical Technology. The film, Career Medical Technologist, has been replaced with a movie made under a grant from the American Cancer Society.[208] For those who have the necessary special projector, an audio-visual sound seminar, "What is Medical Technology?" is available from the Office of the National Committee for Careers in Medical Technology.[209] Certain occasions lend themselves better to a lecture which may be punctuated with a series of colored slides depicting the phases of medical technology. Exhibits and posters may be prepared according to the desires of the recruitment officer. Found convenient to use was a doll dressed as a medical technologist. This, with colorful literature, is an easily set up and portable exhibit.

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[207] James, loc. cit.

[208] _____, "N.C.C.M.T. To Make New Film," G.I.S.T., No. 30 (Washington: National Committee for Careers in Medical Technology, Inc., 1966), p. 2.

[209] Ibid.

Recruitment material in the health professions is an endless source of available publications applicable to the profession of medical technology. The appendix contains a list of suggested sources. Industry, professional organizations and the government are examples of sources from which varieties of literature may be secured. The teaching supervisor should be critical of the literature she uses, select it for its proper presentation of the profession's future, and even more important, be certain it is suitable for the audience to which it will be given. The lack of stimulating recruitment measures has been blamed for the small number of students in the approved schools of medical technology.

Financial aid. Not only should the teaching supervisor be familiar with the vital need for recruitment, the convenient methods available and the audiences with whom contact should be made, she must have knowledge of the sources of financial aid available to students. The Guide Book for Approved Schools in Medical Technology stated that the establishment of scholarships should be encouraged.[210] Through the office of the National Committee for Careers in Medical Technology an annual publication of scholarship material is available and suggestions for obtaining grants are offered. Listed are not only scholarships specifically

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[210]The Guide Book for Approved Schools in Medical Technology, op. cit., p. 9.

applicable to the field of medical technology, but other general and special sources of aid and information are included. Recruitment chairmen will find the January, 1965 and March, 1966, issues of G.I.S.T., available from the office of the National Committee for Careers in Medical Technology, especially valuable to them as they prepare for recruitment activity.

Rewards of the profession. No person considers a profession solely for its immediate relationship to him. Recruitment activities of the teaching supervisor must stress the ever-growing, ever-changing opportunity for those willing to meet the challenges of medical technology.[211] Milos said that guidance programs and all professional literature should stress the importance of teaching as a specialty in the profession.[212] The Occupational Outlook Handbook lists employment opportunities for medical technologists as "expected to remain excellent through the 1970's."[213] It is further pointed out that the demand for graduate training is anticipated to exist in biochemistry,

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[211]Fagelson, op. cit., p. 52.

[212]Catherine Milos, "How to Interest Medical Technologists in Teaching," The American Journal of Medical Technology, 27:7, January-February, 1961.

[213]United States Department of Labor, op. cit., p. 103.

bacteriology, immunology, and virology.[214] Among those associated with American Medical Association Approved Schools of Medical Technology, a need is anticipated for well trained teachers and supervisors with graduate training. The future may be emphasized as limitless.

Surveys of up to the minute salary scales may be secured from the office of the National Committee for Careers in Medical Technology or may be found in the Occupational Outlook Handbook. A study done in 1963 pointed to the increase in salary and anticipated future financial attraction the profession might have.[215] The study clearly points out the salary increases available to the technologist who continues to grow with her profession in education and activity.[216]

The teaching supervisor, through necessary efforts at recruitment, contributes greatly to the profession of medical technology. Vacancies in approved schools will only be filled through active efforts to share information on this paramedical profession with the world at large. Audiences to whom the

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[214] Ibid.

[215] "M. T. (ASCP) Salaries Increase 16% Since 1959," op. cit., p. 1-3.

[216] Haley, op. cit., pp. 28-32.

teaching supervisor may speak are varied, and the methods of describing the activities of medical technology are numerous. Through varied recruitment efforts, the teaching supervisor may add to the effort of elevating the professional image of the medical technologist among the public, she may contribute to the filling of training positions in approved schools, and may thus alleviate the shortage of these trained medical workers.

Development of Faculty

Hangartner described continuing education as a major concern of hospitals.[217] The awareness of such a need, he said, can make the difference between the great hospital and the mediocre. According to The Guide Book for An Approved School of Medical Technology, the teaching supervisor has the duty of orienting those who evaluate the student.[218] Whether the position includes the development of teaching skills or the continued education of the instructors of the school has not been commented upon in the literature. James and Ross described the teaching

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[217]C. J. Hangartner, "The Educational Role of the Hospital," Hospital Progress, 46:104, June, 1965.

[218]The Guide Book for An Approved School of Medical Technology, op. cit., p. 19.

supervisor as one who is a leader;[219] it would follow that effective leadership includes the teaching and development of potential among subordinates. Schroder offers suggestions on the development of competent personnel. He stressed that the process is a highly individual matter and that the person must do it himself.[220] The opportunity for such development is a responsibility of every supervisor, in this case, a function of the effective supervisor in the school of medical technology.

Definition of instructor. The instructors of a school of medical technology are required by The Guide Book for An Approved School of Medical Technology to be registered medical technologists and preferably to have had at least one year of experience. No requirement is established that the instructor possess a Bachelors Degree, nor is it indicated that experience is thought to replace this criteria.[221] Hutchinson said,

> that college seniors should receive instruction from less than their peers is educationally unsound. Thus, the college has the right to insist that the extra mural faculty of the hospital shall consist for the most part of those holding college degrees.[222]

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[219]James, op. cit., p. 258; Ross, op. cit., p. 231.

[220]D. M. Schroder, "Developing Competent Personnel," Hospital Topics, 41:26, September, 1963.

[221]The Guide Book for An Approved School of Medical Technology, op. cit., p. 7.

[222]Hutchinson, op. cit., p. 5.

In continuing to define the instructor, it was noted by Brown and Brill that every professional medical technologist has an obligation to teach.[223]

Continuing education. The necessity of teaching skills and continued education for those who instruct in medical technology programs was stressed in writings by Crowson, Hovde, Moon, Schechter, and Zahn.[224] Milos described the lack of the development of an adequate corps of qualified teachers as a stumbling block to the educational system of medical technology. She stated that the teaching supervisor should stimulate the interest of her students

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[223]Brown, op. cit., p. 118; Robert Brill, "Development of a Faculty for Schools of Medical Technology," The American Journal of Medical Technology, 27:1, January-February, 1961.

[224]Sara Crowson, "State Sponsored Programs for Teachers of Medical Technology," The American Journal of Medical Technology, 27:16-23, January-February, 1961; Hovde, op. cit., p. 72; Mary Kay Moon, "The Three M's of Medical Technology," The American Journal of Medical Technology, 31:385-386, September-October, 1965; D. C. Schechter, "Continuing Education for Hospital Personnel--A Progress Report," Hospitals, 39:63, June 16, 1965; Willard Zahn, "Faculty In-Service Education Programs," The American Journal of Medical Technology, 27:10-15, January-February, 1961.

in teaching and suggested that they be encouraged to take advantage of teaching and administrative programs in graduate schools. Regarding teachers in medical technology, she observed that progress is limited by the competency and inspiration given to students. "The history of the advancement of any profession is marked by the teachers its leaders remember."[225]

Special emphasis on the need for continuing education programs has been made by Crowson, Rausch, Peeler, Hangartner and Haley.[226] Specific examples of the need for continuing education may be demonstrated by two studies. The first, Woodworth's study undertaken to show the effectiveness and adaptability of programmed learning to the field of medical technology education; indicated programmed instruction is adaptable and applicable to the field. Noted of particular importance was the observation that training must be given for instructors to develop and write their own programs.[227] The second, is the presentation of a statistical evaluation of student

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[225]Milos, op. cit., pp. 6-9.

[226]Crowson, loc. cit.; Rausch, op. cit., p. 82; Peeler, op. cit., October, 1963, p. 10; Hangartner, op. cit., p. 104; Haley, op. cit., p. 28.

[227]Mary Esther Woodworth, "The Application of Programmed Learning to Medical Technology Education," The American Journal of Medical Technology, 31:317-330; September-October, 1965.

performance as described by Bordewich. For the effective use of this very easy method of obtaining a true value for student's unknown samples, a knowledge of mathematics is essential.[228]

Provisions for continuing education. The need for continuing education is evident, and because of her capacity as a leader, the teaching supervisor will encourage the development of the maturing instructors in the profession by urging their attendance and participation in educational meetings. Examples of these include local, state and national professional society meetings, post graduate seminars available at various university centers, workshops sponsored by the Catholic Hospital Association and seminars and workshops sponsored by the A.S.M.T.-A.S.C.P. Commission on Continuing Education. Large medical supply houses have tutorial meetings which are sources of excellent new material as also are the seminars held by the Communicable Disease Center. There is, at present, no reference available which cites programs available on a national level. Frequent information may be gleaned from copies of G.I.S.T., the publication of the National Committee for Careers in Medical Technology, and from the A.S.M.T. News. Sources of continuing

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[228]Patricia Bordewich, "Statistical Evaluation of Student Technical Performance," The American Journal of Medical Technology, 31:81-86, March-April, 1965.

education material may be found in the appendix. Until a composit source of material is available, the teaching supervisor must not only encourage the faculty to take part in learning experiences, but must provide them with the knowledge of available seminars and workshops.

Development of faculty policies. The teaching supervisor not only encourages the faculty to continue to broaden their educational experiences, but she, as liaison officer with administration, must strive to develop faculty policies. Because she is the leader, she may often be beset with the unending complaints of those who serve as instructors. Cited in the literature are examples of these which may vary in intensity with the size and type of approved school of medical technology. Ross describes the main objections to teaching as: the failure to receive relief from regular laboratory work in order to teach, a lack of interest on the part of the pathologist, a lack of patience, and the technologist's own preference for performing laboratory tests without people involved.[229] Cunningham wrote that a major drawback in the schools is due to the shortage of medical technologists that are trained to teach and the lack of assistance and material to make the job

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[229]Ross, op. cit., p. 237.

easier.[230] In a salary survey of hospital laboratory personnel, Willey stated that no differential was made in the income of instructors. He concluded that this is typical of the hospital's attitude toward teaching personnel.[231] Complaints such as these form the basis from which the teaching supervisor may begin as she strives to develop the policies of the school of medical technology. Recognition of the instructors as a faculty, payment of salary in accordance with the position, and relief from routine laboratory duties in order to give full attention to the teaching program may form a basis for firmly defined faculty policies.

As the status of the faculty is raised through the efforts for continuing education by the teaching supervisor, schools of medical technology will approach the high academic level stressed by Williams.[232] Though it is admittedly involved, the teaching supervisor can gradually develop the self concept of the faculty to a point where they recognize themselves as teachers and realize their responsibility for continuing growth and education in the profession.

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[230]J. A. Cunningham, "Meeting the Demand for Technically Trained Personnel in the Medical Laboratory," Bulletin of the College of American Pathologists, 18:84, May, 1964.

[231]E. N. Willey, "Salary Survey of Laboratory Personnel," Bulletin of the College of American Pathologists, 19:153, July, 1965.

[232]Williams, op. cit., pp. 341-348.

Liaison officer.

The role of the teaching supervisor as liaison officer has been cited by Breen and Roe, but has not been clearly defined.[233] There is no requirement for a formal affiliation between hospitals and the colleges from which students are received. Both the bulletin of The Registry of Medical Technologists of the American Society of Clinical Pathologists and The Guide Book for An Approved School of Medical Technology urge, but do not require that approved schools become affiliated with colleges in order that the student receive the college degree at the end of the four-year training period.[234] The bulletin from The Registry of Medical Technologists further stated that no formal procedure for affiliation has been arranged and that the process should be arranged on a local level through the cooperative efforts of the leaders of both schools.[235] The Guide Book for An Approved School adds to this by stating that

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[233]Breen, op. cit., "Role of a Teaching Supervisor;" Roe, op. cit., p. 5.

[234]The Registry of Medical Technologists of the American Society of Clinical Pathologists, op. cit., p. 17; The Guide Book for An Approved School of Medical Technology, op. cit., p. 10.

[235]The Registry of Medical Technologists, loc. cit.

the liaison efforts should mean that the preclinical training is satisfactory to the hospital and that the clinical year meets the collegiate requirements for a degree.[236]

A review of the literature indicates that the liaison between hospital and colleges is a weak point in the program of medical technology education. Supporting this are the results of the Alabama Pilot Study. Difficulties experienced by the college students due to the lack of strong college affiliation with the hospital included improper counseling by non-medical technologist advisors, and such a heavy load of science courses that the well rounded education became non-existent for the future medical technologist. The study emphasized the need for stronger liaison in order that both programs might be familiar with the quality of instruction received by the student. Further noted is that although liaison is needed in order to standardize the programs in the nation, too much may stifle the need for experimentation in medical technology curricula.[237]

Lack of communication. Baird stated that there is a lack of communication between schools of medical technology and student

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[236]The Guide Book for An Approved School, loc. cit.

[237]The Alabama Pilot Study, op. cit., p. 11.

advisors on the college campus.[238] Trumbull noted the necessity of joint effort on the part of hospitals and colleges in the education of skilled medical technologists.[239] In another study Trumbull stated that the college accrediting bodies consider the hospital clinical year as taking place in what may be termed a branch institution. He stated that many of the specifications set forth in minimum standards of education are not met in the hospital "branch" of the college.[240] The implications of this are emphasized by Williams who suggested that this impending problem be solved by closer alliance between American Medical Association Approved Schools of Medical Technology and degree granting institutions.[241] Godwin contended that in order to train the number of people needed in the profession, the colleges should assume a greater portion of the responsibility; he pointed out that this might be accomplished through better counseling services which could facilitate the transfer of students from the college to the hospital school system.[242]

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[238]Elwood E. Baird, "The Communication Gap Between Directors of Approved Schools and Science Advisors in Colleges and Universities," A Letter to Pathologists--Directors of All A.M.A. Approved Schools of Medical Technology, (Board of Schools of Medical Technology, June 1, 1965), p. 1.

[239]Trumbull, op. cit., August, 1964, p. 83.

[240]Trumbull, op. cit., September-October, 1962, p. 270.

[241]Williams, op. cit., p. 343.

[242]Godwin, op. cit., p. 20.

Support to his argument comes from a study done by the National Committee for Careers in Medical Technology which indicated that the chief reason for dropouts in the medical technology curricula was the lack of liaison between the hospital and college during the preclinical years and the absence of medical technologists to serve as counselors during this period.[243] Sister Martin Mary wrote that with the exception of this study, very little has been published concerning the number of drop-outs among students of medical technology.[244]

Rausch described college affiliation and indicated that it bears a direct relationship to the separation of teaching and service functions of instructors.[245] A separation of these functions may result in a higher academic status for the teaching personnel, especially the teaching supervisor, and ultimately a better and closer college affiliation.

Value of liaison. The value of liaison is shown in the higher quality of educational programs resulting from a joint effort of those involved in the education of medical technologists.[246]

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[243] _____, "N.C.C.M.T. Examines Drop-Out Problem," G.I.S.T., No. 21 (Washington: National Committee for Careers in Medical Technology, Inc., 1963), p. 1.

[244] Sister Martin Mary, op. cit., p. 120.

[245] Rausch, op. cit., p. 86.

[246] Williams, op. cit., pp. 341-348.

Support to this statement by Williams is found in The Guide Book for An Approved School of Medical Technology which states that the best planned hospital training programs occur in those schools having a closely coordinated hospital-college educational system.[247] The definition of curriculum, said Sister Elizabeth Ann, must include the total program from freshman orientation through the registry examination, indicating the student has become a qualified professional person in the field of medical technology.[248] Brown said that it is unusual for the joint planning of curricula to exist at any stage of the educational program. He further stated that joint curriculum planning through the entire program can assure the degree granting institution that the standards are sufficiently high to merit college credit.[249]

Liaison is an ultimate goal of the school of medical technology if the program is to provide quality education comparable to that received on the college level.[250]

The teaching supervisor as liaison officer. That the liaison officer should be a medical technologist was emphasized by Sister

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[247]The Guide Book for An Approved School of Medical Technology, op. cit., p. 18.

[248]Sister Elizabeth Ann, op. cit., September, 1963, p. 52.

[249]Brown, op. cit., p. 118.

[250]Trumbull, op. cit., September-October, 1962, p. 263.

Charlotte and by James who implied that the most important function of the teaching supervisor outside of the hospital is that relationship held with faculty and administrators of affiliated colleges.[251]

The Guide Book for Approved Schools in Medical Technology stated that the teaching supervisor and college officials should work continuously on the development of the combined program. It is further added that the teaching supervisor should have an appointment on the college faculty.[252] Cunningham stated that this appointment is rarely made.[253] Hutchinson added that the faculty post of the medical technologist liaison officer should include the teaching of such courses as orientation and the advising of all medical technology students on the campus.[254] Williams stated that a solution to the present delema may be to require that all teaching supervisors have a Master's Degree and place such a person as head of, or consultant to, each academic program.[255]

In the continuing definition of functions to be assigned to the teaching supervisor, the position of liaison officer must be

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[251]Sister Charlotte, op. cit., pp. 96-98; James, op. cit., p. 262.

[252]The Guide Book for Approved Schools in Medical Technology, op. cit., p. 11.

[253]Cunningham, op. cit., May, 1964, p. 83.

[254]Hutchinson, op. cit., p. 4.

[255]Williams, op. cit., pp. 347-348.

included. The lack of close alliance with college programs has been blamed for the weakness in many hospital schools of medical technology. Strong programs, on the other hand, have been cited as the result of closely coordinated hospital-college educational systems. Barring individual administrative conflicts, the interest and dedication held by the teaching supervisor may be compounded as she assumes the role of liaison officer. The extent to which cooperative planning of the program exists and the degree to which the teaching supervisor offers counseling services to the undergraduates, may be reflected in the ultimate strength of the entire program and the quality of education provided during the hospital year.

The administrative functions of the teaching supervisor, in retrospect, are not clearly defined. Regarding the selected duties, there is a need for clarity in the literature. To successfully function as counselor, recruitment officer, and liaison officer, a more clearly defined view of these positions should exist. The literature shows a need to present a favorable image of the profession to the public, thereby recruiting qualified students into American Medical Association Approved college programs of medical technology. A clarification of the limits of the counseling and liaison officer functions are indicated in order that the teaching supervisor, the hospital administrator, and college officials together strive for the development of quality education programs. It has

been indicated that the teaching supervisor's continued contact with pre-medical technology students during the college program sharply decreases the number of drop-outs and by cooperative planning of the total program can develop the high quality of education required. One of the chief administrative duties of the teaching supervisor is providing continued opportunities of education for the faculty and making such available to them by establishing, with the hospital administration, faculty policies that will include recognition of the faculty status and time off for educational development. Clarity in this administrative area could enable greater development of the role of the teaching supervisor, recognition of the educational system and higher quality teachers in American Medical Association Approved Schools of Medical Technology.

CHAPTER III

SUMMARY AND IMPLICATIONS

Summary. A review of the literature showed that the role of the teaching supervisor in American Medical Association Approved Schools of Medical Technology is not simply defined. It appears that the definition of the role is related to diffuse areas. The complexity of the problem implies an inter-relation of all phases of medical technology education. The core of which is the ultimate definition of the role of the teaching supervisor.

A selection of the responsibilities of the teaching supervisor in the organization and administration of the approved school of medical technology have been described from a review of the literature. Through the maintenance of record systems, securing of physical facilities and a cooperative effort with the administration in the preparation of financial allotments, the position of teaching supervisor serves to relieve the very busy post of the pathologist. As registrar, both admission records, school inspection data and permanent student material is maintained. School responsibilities of the teaching supervisor include the orientation of new students to this para-medical profession. Not only is she responsible for the adjustment of the student to the hospital educational system, the teaching supervisor is required to continually evaluate and develop the curriculum of the school of medical technology.

Both the orientation program and the curriculum development responsibilities, as revealed in the literature, are vaguely defined. Clear definitions of such important subjects as orientation, curriculum, philosophy and aims of education must achieve a more universal acceptance before the role of the teaching supervisor can be clearly outlined in these and related areas. Arguments on one side define orientation as beginning with the first college course, curriculum is defined by this group as comprising the entire four-year program. In opposition to this, the literature reveals a group solely interested in the students during the fourth year spent in the hospital school. Related to the definition of curriculum are aims of education which are conspicuously absent from the philosophy of medical technology education. The trend of educational theory in medical technology is evident to one who searches the literature. However, for the goal of quality education to become a national reality, these areas need to be clearly presented for the teaching supervisor. The role of the medical technology educator may then be more clearly defined in relation to clearly understood objectives.

In addition to the school responsibilities of the teaching supervisor, the administrative functions included among her duties encompass the areas of counseling, recruitment, the development of a faculty and serving as liaison officer to local colleges. The conspicuous absence of counseling services provided to medical

technology majors on the college campus by professional medical technologists has been labeled as the cause for a high attrition rate in many institutions. Closely allied, and better elaborated upon is the administrative function of recruitment. Through individual counseling which may occur in recruitment efforts and through the process of dispensing correct information about the profession to varied groups, the recruitment officer plays an important role in providing the public with the correct professional image of the medical technologist.

Beyond the responsibilities of counseling and recruitment, the teaching supervisor has the important task of developing a competent faculty. Although the subject is not treated specifically in the literature, one is led by deduction to assume that the effective leadership of the teaching supervisor will result in the development of the capacities of subordinates. The lack of universal aims and philosophy is again evident. If all professional medical technologists were aware of the obligation to grow and learn continually, the task of developing a faculty would be an easier one.

The stumbling block presented by unqualified instructors at the senior college level in schools of medical technology has been extensively covered in the literature. Nationally sponsored continuing education programs, although they may offer no graduate credit, represent an effort to overcome the problem. Not only are educational qualifications of instructors a problem, but the policies under which

they function as instructors are a source of discontent for the majority. As part of the effort to develop a faculty and standing recognition for the school of medical technology, the teaching supervisor works cooperatively with the pathologist and hospital administrator to establish standards and policies acceptable to faculty members of an academic extension providing an accredited senior year of college.

The necessity of liaison between hospital and college medical technology school programs is clearly illustrated in the literature. Only briefly is the role of the teaching supervisor connected with this vital function. The review of literature indicated that liaison could be a controlling factor in defining a program of medical technology as either weak or strong. Although the specific duties of the teaching supervisor in this position have to be more clearly understood and universally accepted, the literature points to the fact that one of the most important administrative functions that can be held by the teaching supervisor is that of strengthening the program through efforts for constant college liaison.

Implications. The review of selected functions of the teaching supervisor in American Medical Association Approved Schools of Medical Technology indicates the position is one of great potential, one which is undeveloped, one about which there is considerable ambiguity. From the literature, as summarized, there emerge several areas on which further study seems essential. A clarification of the

philosophy of education, contents and scope of the curriculum, aims of education and relationship of the college to the hospital program may aid the teaching supervisor in comprehending her role. The importance, limits, and duties of liaison officer and counselor would possibly develop from this study. A consideration of the need for extensive cooperation of hospital administrator, pathologist and the consideration of the hospitals part as an educational institution may point out the future potential of medical technology education.

Finally, in consideration of the selected functions of the teaching supervisor, one is left to ponder the vast and diverse task facing the educator in medical technology. The overall implication of the review of the literature is that a study should be made regarding the teaching supervisor's need for special graduate educational training in order to equip her for the many faceted and challenging role of medical technology educator.[256]

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[256]Williams, loc. cit.; Roe, op. cit., p. 1; Breen, op. cit., "Role of the Teaching Supervisor."

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F. LETTERS

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APPENDIX

APPENDIX

SOURCES OF TEACHING AIDS

A. Specific Sources:

(1) Audio Visual Library Bulletin

Published May, 1966, Price $2.00
ASMT Education and Research Fund, Inc.
Suite 25
Herman Professional Building
Houston, Texas, 70025

(2) Curriculum for Schools of Medical Technology

Published 1964, Price $5.00
Board of Registry of the American Society of Clinical Pathologists
Box 44
Muncie, Indiana

(3) Film Reference Guide for Medicine and Allied Sciences

Revised 1964; Public Health Service No. 487, Price $2.50
U. S. Government Printing Office
Superintendent of Documents
Washington, D. C., 20402

(4) Guidebook for Instruction in Medical Technology

Published 1963, Price $5.00
National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N. W.
Washington, D. C., 20036

(5) Public Health Service Film Catalogue, 1964-1965

Publication No. 776; Published 1964, Price $ .75
U. S. Government Printing Office
Superintendent of Documents
Washington, D. C., 20402

B. General Information:

(1) ASMT Education and Research Fund, Inc.
Suite 25
Herman Professional Building
Houston, Texas, 77025

(2) Commission on Continuing Education of the A.S.C.P.
2052 N. Orleans Street
Chicago, Illinois

(3) Communicable Disease Center
U. S. Department Health, Education, and Welfare
Public Health Service
Bureau of State Services
Atlanta, Georgia

(4) National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N. W.
Washington, D. C., 20036

(5) Publications Department
Catholic Hospital Association
1438 South Grand Boulevard
Saint Louis, Missouri

SOURCES OF RECRUITMENT MATERIAL

A. Specific Material:

(1) Accredited Higher Institutions #OE 50012-64

Published 1965, Price $ .70
U. S. Department of Health, Education and Welfare
Office of Education
Washington, D. C.

(2) Accreditation in Allied Medical Services

National Commission on Accrediting
1785 Massachusetts Avenue, N. W.
Washington, D. C., 20036

(3) Health Careers Guidebook--U. S. Department of Labor

Published 1966; Price $1.50
U. S. Government Printing Office
Superintendent of Documents
Washington, D. C., 20402

(4) Health Manpower for Virginia

Virginia Council on Health and Medical Care
100 East Franklin Street
Richmond, Virginia, 23219

(5) National Vocational Guidance Association--Bibliography of Current Occupational Literature

Published 1966; Price $1.00
American Personnel and Guidance Association
1605 New Hampshire Avenue, N. W.
Washington, D. C., 20009

(6) Occupational Outlook Handbook

U. S. Department of Labor Bulletin No. 1450; Price $5.00
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C., 20402

(7) Sources of Information in Scientific Fields

Manufacturing Chemists Association, Inc.
1825 Connecticut Avenue
Washington, D. C.

B. General Sources:

(1) American Society of Medical Technologists
Suite 25
Hermann Professional Building
Houston, Texas, 77025

(2) Career Information Services
Charles Pfizer and Company, Inc.
235 E. 42nd Street
New York, New York

(3) Career Information Service
New York Life Insurance Company
Box 51
Madison Square Station
New York, New York

(4) Career Information Service
The Upjohn Company
Kalamazoo, Michigan

(5) National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N. W.
Washington, D. C., 20036

(6) Registry of Medical Technologists of the American Society of Clinical Pathologists
P. O. Box 44
Muncie, Indiana, 47344

(7) Virginia Council on Health and Medical Care
100 East Franklin Street
Richmond, Virginia, 23219

OPPORTUNITIES FOR CONTINUING EDUCATION

A. Program Information:

(1) American Society of Medical Technologists
Suite 25
Hermann Professional Building
Houston, Texas, 77025

(2) National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N. W.
Washington, D. C., 20036

(3) National Committee on Medical Technology Education
1025 E. H. Crump Boulevard
Memphis, Tennessee, 38104

(4) Catholic Hospital Association Workshops
1438 South Grand Boulevard
St. Louis, Missouri

(5) Commission on Continuing Education of the A.S.C.P.
2052 N. Orleans Street
Chicago, Illinois

(6) Communicable Disease Center
U. S. Department Health, Education and Welfare
Public Health Service
Bureau of State Services
Atlanta, Georgia

(7) Council on Medical Education
American Medical Association
535 North Dearborn Street
Chicago, Illinois, 60610

B. Financial Assistance Information

(1) American Society of Medical Technologists
Suite 25
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Houston, Texas, 77025

(2) National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N. W.
Washington, D. C., 20036